JOURNAL OF GEODYNAMICS

Editor-in-Chief: ANTON L. HALES
Executive Editors: WOLF R. JACOBY, NICHOLAS RAST

VOLUME CONTENTS AND AUTHOR INDEX
VOLUME 14, 1991

PERGAMON PRESS
OXFORD • NEW YORK • SEOUL • TOKYO

JOURNAL OF GEODYNAMICS

EDITOR-IN-CHIEF: **A. L. Hales** (Canberra, Australia)

EXECUTIVE EDITORS

W. R. Jacoby
Johannes Gutenberg-Universität Mainz
Institut für Geowissenschaften
Saarstr 21, D-6500 Mainz
Germany

N. Rast
College of Arts and Sciences
Department of Geological Sciences
Bowman Hall, University of Kentucky
Lexington, KY 40506-0059, U.S.A.

EDITORIAL BOARD

K. Aki	(Los Angeles, CA, U.S.A.)	**A. R. Ritsema**	(De Bilt, The Netherlands)
D. L. Anderson	(Pasadena, CA, U.S.A.)	**L. Rybach**	(Zurich, Switzerland)
K. C. Burke	(Washington, DC, U.S.A.)	**I. S. Sacks**	(Washington, DC, U.S.A.)
F. Chayes	(Washington, DC, U.S.A.)	**J. H. Sass**	(Flagstaff, AZ, U.S.A.)
D. Denham	(Canberra, Australia)	**H.-U. Schmincke**	(Kiel, Germany)
A. M. Dziewonski	(Cambridge, MA, U.S.A.)	**E. A. Silver**	(Santa Cruz, CA, U.S.A.)
E. R. Engdahl	(Denver, CO, U.S.A.)	**S. L. Soloviev**	(Moscow, Russia)
S. A. Fedotov	(Petropavlovsk, Russia)	**S. Steinthorsson**	(Reykjavik, Iceland)
M. O. Garcia	(Honolulu, HI, U.S.A.)	**H. Stiller**	(Potsdam, Germany)
A. Kröner	(Mainz, Germany)	**S. R. Taylor**	(Canberra, Australia)
X. Le Pichon	(Paris, France)	**M. N. Toksöz**	(Cambridge, MA, U.S.A.)
R. Meissner	(Kiel, Germany)	**D. L. Turcotte**	(Ithaca, NY, U.S.A.)
P. Morgan	(Flagstaff, AZ, U.S.A.)	**S. Uyeda**	(Tokyo, Japan)
S. Mueller	(Zurich, Switzerland)	**R. Van der Voo**	(Ann Arbor, MI, U.S.A.)
A. Nicolas	(Montpellier, France)	**P. Vyskočil**	(Prague, Czechoslovakia)
L. O. Nicolaysen	(Johannesburg, S. Africa)	**B. F. Windley**	(Leicester, England)
H. C. Noltimier	(Columbus, OH, U.S.A.)	**P. J. Wyllie**	(Pasadena, CA, U.S.A.)

Publishing Office

Pergamon Press Ltd, Pergamon House, Bampfylde Street, Exeter EX1 2AH, England
[*Tel.* Exeter (0392) 51558; *Fax* (0392) 425370]

Subscription and Advertising Offices

North America—Pergamon Press Inc., 660 White Plains Road, Tarrytown, NY 10591-5153, U.S.A.
Rest of the World—Pergamon Press Ltd, Headington Hill Hall, Oxford OX3 0BW, England
[*Tel.* Oxford (0865) 794141]

Subscription Rates

Annual institutional subscription rate (1992): £225.00 (US$410.00). Two-year institutional rate (1992/93): £427.50 (US$779.00). Sterling prices are definitive. U.S. dollar prices are quoted for convenience only, and are subject to exchange rate fluctuation. Prices include postage and insurance and are subject to change without notice. Subscription rates for Japan are available on request.

Back Issues

Back issues of all previously published volumes are available direct from Pergamon Press.

Published 8 issues/annum in April, May, June, July, August, September, October and November

Copyright © 1992 Pergamon Press Ltd

Application to mail at second class postage rate is pending at RAHWAY NJ. Postmaster send address corrections to *Journal of Geodynamics*, c/o Pergamon Press Inc., 660 White Plains Road, Tarrytown, NY 10591-5153, U.S.A.

LIST OF CONTENTS

NUMBERS 1-4

RECENT CRUSTAL MOVEMENTS IN AFRICA

Proceedings of the Third International Symposium

P. Vyskočil and W. Jacoby	V	Preface
Erwin Groten	1	Geodetic techniques applied to the detection and monitoring of recent crustal movements
Lars E. Sjöberg, Erick Asenjo and Abera Alemu	9	The establishment of a GPS deformation network in the Ethiopian Rift Valley
Hassan Hashim Fashir	19	The gravimetric geoid of Sudan
B. A. El Hakim, M. M. Dessoky, A. A. El Sayed, N. Z. Basta, B. S. Mohamed and E. M. Salem	37	Microseismicity and tectonics of Sinai
Attallah M. Wassef and Mohamed F. H. El-Maghraby	51	An investigation into the integrity of surveying with the global positioning system (GPS)
Kamal Abdellatif Abdalla	59	Quality of GPS point positioning by TI 4100 receiver
R. S. Rostom	65	Monitoring recent crustal movements in the Kenya Rift Valley by global positioning system (GPS)—a proposal
R. M. Kebeasy and A. A. Gharib	73	Active fault and water loading are important factors in triggering earthquake activity around Aswan Lake
H. M. A. El-Khashab, G. H. Hassib, E. M. Ibrahim and M. M. Dessoky	87	Seismicity and composite focal mechanism for microearthquakes in Kalabsha area west of Aswan Lake and their tectonic implication
E. Refai, M. Maamoun, M. El-Difrawy, S. Attia and G. Hamada	105	A preliminary report on the frequency characteristics of near-surface layers in the vicinity of the High Dam Lake
H. M. A. El-Khashab, R. E. Fathel-Bary, D. W. Simpson and E. M. Ibrahim	111	A local magnitude scale for Aswan earthquakes, Egypt
E. M. Abdelrahman, A. Tealeb and H. A. Ahmed	125	Gravity map of Kalabsha area, northwest of Aswan Lake, and its structural significance

A. Tealeb and A. H. Radwan	137	Gravity map of Seiyal area, northwest of Aswan Lake, and its subsurface structural setting
A. Tealeb, A. H. Radwan and H. A. Ahmed	147	Basement relief map of Kalabsha and Seiyal areas, northwest of Aswan Lake, Egypt
R. M. Kebeasy, A. I. Bayoumi and A. A. Gharib	159	Crustal structure modelling for the northern part of the Aswan Lake area using seismic waves generated by explosions and local earthquakes
P. Vyskočil	183	Recent crustal movement studies in Aswan region, Egypt: Introduction
A. Tealeb	189	Analysis of levelling measurements along the High Dam, Aswan, Egypt
P. Vyskočil, A. Tealeb, R. M. Kebeasy and S. M. Mahmoud	221	Present state of geodynamic properties of Kalabsha area, northwest of Aswan Lake, Egypt
P. Vyskočil, A. Zeman, A. Tealeb, S. M. Mahmoud and G. S. El-Fiky	249	Vertical movements around the Kalabsha fault, northwest of Aswan Lake, from precise levelling
P. Vyskočil, A. Tealeb and A. S. Mohamed	263	Recent crustal movement studies at Seiyal area, northwest of Aswan Lake, Egypt

AUTHOR INDEX

Abdalla K. A., 59
Abdelrahman E. M., 125
Ahmed H. A., 125, 147
Alemu A., 9
Asenjo E., 9
Attia S., 105
Basta N. Z., 37
Bayoumi A. I., 159
Dessoky M. M., 37, 87
El-Difrawy M., 105
El-Fiky G. S., 249
El Hakim B. A., 37
El-Khashab H. M. A., 87, 111
El-Maghraby M. F. H., 51
El Sayed A. A., 37
Fashir H. H., 19
Fathel-Bary R. E., 111
Gharib A. A., 73, 159
Groten E., 1
Hamada G., 105
Hassib G. H., 87
Ibrahim E. M., 87, 111
Kebeasy R. M., 73, 159, 221
Maamoun M., 105
Mahmoud S. M., 221, 249
Mohamed A. S., 263
Mohamed B. S., 37
Radwan A. H., 137, 147
Refai E., 105
Rostom R. S., 65
Salem E. M., 37
Simpson D. W., 111
Sjöberg L. E., 9
Tealeb A., 125, 137, 147, 189, 221, 249, 263
Vyskočil P., 183, 221, 249, 263
Wassef A. M., 51
Zeman A., 249